

REMARKS

Favorable reconsideration and allowance of this application are requested.

I. Claim Amendments

By way of the amendment instructions above, the substance of claims 2 and 3 has been incorporated into claim the amended version of claim 1. As such, claims 2 and 3 have been cancelled. In addition, claim 1 has been revised so as to clarify that the ratio of the copolymerizable monomer is 0.01 to 30 mol.% as supported by page 11, lines 7-12 of the specification.

Independent claims 1 and 9 have each been revised so as to emphasize that the laser-weldable composition is one which is subjected to laser welding and comprises the defined components. Thus, the independent claims are directed to post-laser welded PBT-series resin compositions.

Claim 4 has been amended so as to be dependent on the amended version of claim 1.

Claims 5 and 9 have been revised so as to clarify the expression of the weight ratio (B)/(A). In addition, claim 9 has been limited to a polybutylene terephthalate-series resin (A) comprising a polybutylene terephthalate-series copolymer modified with 0.01 to 30 mol% of a copolymerizable monomer (i.e., by virtue of the deletion of a polybutylene terephthalate from the originally recited Markush grouping).

Claim 12 is new and is based on the laser-welding process disclosed, for example, at page 11 and page 22, lines 5-8 of the originally filed specification.

Thus, claims 1 and 4-12 remaining pending herein.

II. Response to Restriction Requirement

Applicants' undersigned attorney hereby confirms the provisional election to prosecute the claims of Group I (including claims 1-10) in the subject application.¹ Reconsideration and withdrawal of the restriction requirement is requested, however.

Specifically, the Examiner asserts that the claims lack the same technical features since pending claim 1 "...does not avoid the prior art." As will become clear from the following discussion, however, claim 1 does in fact define patentable subject matter over the applied prior art so that rejoinder of claim 11 (and new claim 12 presented above) with claims 1-10 should ensue.

Such favorable action is therefore solicited.

III. Response to Art-Based Rejections

Alternative rejections under 35 USC §102(b) or 35 USC §103(a) have been advanced against prior claims 1-10 based separately on WO 01/00409 (corresponding to USP 6,521,326 to Fischer (hereinafter D1)), JP09291204 (hereinafter D2) and JP 2000007902 (hereinafter D3). As will become evident from the following discussion, the present invention defines novel and unobvious subject matter over these applied references of record.

(A) The Applied References

(1) Reference D1

Reference D1 discloses as an object thereof to improve the material properties, in particular the ultimate tensile strength, of the welded regions produced between the individual moldings within the composite (col.1, lines 40-43).

¹ The Examiner notes on page 2, line 14-16 that "claim 10" is withdrawn from consideration. This reference appears to be a clerical error and should have referred to non-elected claim 11.

D1 discloses a composite composed of at least one first molding and one second molding, where the first molding and the second molding have been immovably bonded to one another via at least one partial region of one surface α of the first molding and of one surface β of the second molding, via a welded region, and where, based on the first molding, at least 50% by weight of the first molding is composed of a molding composition comprising: A) from 5 to 99% by weight of a polyester, B) from 1 to 95% by weight of a fibrous filler pretreated with an aminosilane compound and with an epoxy polymer, C) from 0 to 3)% by weight of an elastomeric polymer, and D) from 0 to 40% by weight of other additives, where the total of the percentages by weight of components A) to D) is 100% (claim 1).

D1 also discloses that the component A) comprises a mixture of polybutylene terephthalate and polyethylene terephthalate and/or a polycarbonate (claim 3).

Regarding the polyester, D1 discloses polyesters based on aromatic dicarboxylic acids and on an aliphatic or aromatic dihydroxy compound (col. 2, lines 25-27). D1 also discloses that up to 30 mol % of the aromatic dicarboxylic acids may be replaced by aliphatic or cycloaliphatic dicarboxylic acids, such as adipic acid, azelaic acid, sebacic acid, dodecanedioic acids and cyclohexanedicarboxylic acids (col. 2, lines 44-51). Particular preference is given to polyethylene terephthalate (PET), polypropylene terephthalate and polybutylene terephthalate (PBT), and mixtures thereof. Preference is further given to PET and/or PBT which comprise, as other monomer units, up to 1% by weight, preferably up to 0.75% by weight, of 1,6-hexanediol and/or 5-methyl-1,5-pentanediol (col.2, lines 60-64).

D1 discloses that polyesters include polycarbonates obtainable by polymerizing aromatic dihydroxy compounds, in particular 2,2-bis(4-hydroxyphenyl)propane (bisphenol A) or its derivatives, e.g. with phosgene and that the amount of the polycarbonates is up to 90% by weight, preferably up to 50% by weight based on 100% by weight of component A) (col.4, lines 49-54 and 56-59).

The molding compositions of D1 may comprise, as component C), up to 30% by weight of elastomeric polymers (frequently also called impact modifiers, elastomers or rubbers) (col. 5, lines 60-65). ABS and ASA polymers are disclosed (col.9, the table and lines 44-53). 9 parts by weight of ASA and 9 parts by weight of PSAN relative to 100 parts by weight of PBT are employed in the examples (Table 1).

Regarding the ability of the D1 composition to be welded, it is disclosed that welding by friction, heated tools, ultrasound, laser, hot plate, high frequency and heat impulse may be employed (col.11, lines 43-45). In the Examples of D1, a vibration welding machine is used (col.18, lines 33-34).

(2) Reference D2

Reference D2 discloses a polybutylene terephthalate resin composition comprising a resin component comprised of (A) 95-55 % by weight of a modified polybutylene terephthalate resin having 5-40 mol% of comonomer unit and (B) 5-45% by weight of a polycarbonate resin, (C) 0.001-5 parts by weight of a crystalline nucleus agent, (D) 40-200 parts by weight of an inorganic filler and (E) 0.1-5 parts by weight of a coloring component relative to 100 parts by weight of the resin component (claim 1).

As the comonomer, D2 discloses isophthalic acid, naphthalene dicarboxylic acid, diphenylcarboxylic acid, diphenyl ether dicarboxylic acid. 2, 2-bis (4-hydroxyphenyl)propane, diethoxylated bisphenol A and the like (paragraph [0004]).

Regarding the effect of the D2 composition, it is disclosed that the resin composition has high mechanical strength, rigidity and good moldability, and shows improved surface sink and excellent appearance of molded articles (paragraph [0025]).

(3) Reference D3

Reference D3 discloses a two-color-molding resin composition comprising (A) 100 parts by weight of at least one polyester-series resin selected from the group consisting of a polyalkylene terephthalate-series resin and a polyalkylene naphthalate-

series resin, (B) 10-100 parts by weight of a styrenic resin, (C) 0-30 parts by weight of a polycarbonate-series resin and (D) 10-150 parts by weight of an inorganic filler (claim 1).

Regarding the polyester resin, D3 discloses, as a comonomer, isophthalic acid, phthalic acid, and other aromatic dicarboxylic acids, aromatic diols such as bisphenol A, and the like (paragraph [0011][0014])

The effects of the D3 composition are said to be that the resin composition can attain stable moldability and high adhesion even if it performs two color molding by use of different-species of resins and can provide two-color-molding articles having high mechanical strength (paragraph [0053]).

(B) Patentability of the Claimed Invention Over the Applied References

The applied references fail to disclose or suggest a combination of the *specific* modified polybutylene terephthalate (PBT)-series resin (A) with another *specific* resin (B) to achieve a composition that is capable of being laser welded.

In this regard, applicants note that references D2 and D3 do not disclose or teach anything about laser welding. Although reference D1 discloses a PET resin and a modification thereof with up to 30mol% of an aliphatic or alicyclic dicarboxylic acid, reference D1 nowhere discloses or suggests the *specific* copolymerizable monomer for the *specific* modified PBT-series resin as claimed herein. Furthermore, reference D1 merely exemplifies laser welding as one of a number of various welding methods. Thus, reference D1 tells the skilled person that there is no criticality as to which welding method may be employed for the therein disclosed compositions. The skilled person would therefore not be motivated at all by reference D1 to employ the above specific combination of resin components in a laser welding method.

Applicants note that the present invention also shows unexpected results. That is, since reference D1 employs an ordinary polyester and a fibrous filler, thermal

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weldability, vibration weldability, and tensile strength or the like may be improved. However, laser weldability of such a combination would never be predicted from reference D1, since it fails to teach one skilled in the art about special optical properties (transparency) relative to a laser beam and the special laser weldability or bondability to a counterpart for a resin composition for use in a laser welding method. Moreover, since references D2 and D3 have no relation to laser welding, laser weldability of the resin compositions of D2 and D3, a skilled person would never be motivated to employ such resins for laser welding.

Contrary to the applied references of record, according to the present invention, a resin composition is provided for laser welding which comprises the above-noted specific combination of components which enable the resin composition to exhibit high light transmittance relative to a laser beam and thus be highly adaptive for use in a laser welding method. Therefore, a shaped article formed from the resin composition of the present invention can be easily bonded to a counterpart by laser irradiation to form a composite article. Such a result is clearly supported by the Examples and would never be predicted from the applied references of record.

In view of the amendments and remarks presented above, applicants suggest that this application is in condition for prompt allowance and Official Notice to that effect is solicited.

Respectfully submitted,

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